DOCUMENT RESUME

ED 066 968 FL 003 382

AUTHOR Kaneda, Michikazu
TITLE On the Principle of "Speech before Writing."
INSTITUTION Ehime Univ. (Japan). School of Education.
PUB DATE Mar 72
NOTE 12p.
JOURNAL CIT Ehime University Bulletin, School of Education; v4 n1 pt2 p131-141 Mar 1972

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Audiolingual Methods; Contrastive Linguistics; *Educational Experiments; Inner Speech (Subvocal); Interference (Language Learning); Language Research; Learning Theories; Oral Communication; Psychology; Reading Skills; *Second Language Learning; Silent Reading; Speech; Teaching Methods; *Verbal Learning; *Visual Learning; Writing Skills

ABSTRACT

The discussion presented here seeks to defend Lado's principle of "speech before writing" and focuses attention on the comparative effectiveness of audio versus visual presentation of language material. Reports on several experiments dealing with this problem lead the author to conclude that, as long as we have the tendency of verbalization or presumable auditory storage of inner speech, auditory image plays a vital role in verbal behavior and that establishing a solid auditory image of the target language is the very basis of acquisition of the language. This can be achieved by aural exposure to the language and by imitative verbalization of the auditory stimuli. (Author/VM)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED 066963

On the Principle of "Speech before Writing"

Michikazu KANEDA

Department of English
School of Education
Ehime University

Ehime University Bulletin, School of Education
Part II, 4(1), March, 1972

愛媛大学教育学部紀要　第二部　人文・社会科学
第四巻　第一号　抜刷
昭和47年3月

On the Principle of "Speech before Writing"

Michikazu KANEDA

Department of English
School of Education
Ehime University

I.

The audio-lingual approach has the principle of speech before writing as one of its most basic principles. Those who advocate the audio-lingual approach put a heavy emphasis on oral mastery of a language. According to their discussion of the process of learning a foreign language, mastery of the sound system of a foreign language and that of structure through oral practice are the most important aspect of learning, and reading and writing should come fairly easily as the result of such oral mastery. Lado postulated several principles for foreign language learning. Among his principles, "speech before writing" is certainly given the utmost primacy.[1] If we take this principle as literally as possible, teaching of writing will never take place before speech is completed, which is not, fortunately, what Lado recommends. His point is that the oral mastery of a foreign language will eventually facilitate the learning of the written forms of the language. In other words, if a foreign language is not learned aurally or orally first, it is highly doubtful whether the learner can develop the skills in reading and writing in that language. Lado employs a few facts and empirical reports to defend this principle. He says that the speech is the language and written forms are imperfect representation of the speech. This is an obvious truth from the point of what the present-day linguistics has discovered. He furthers his corollary upon this sheer linguistic fact and says that even if the aim of learning a foreign language is only to read or write, the attainment of the goals is imperfect, or highly improbable without a solid basis acquired through oral mastery of the language. Further, Lado tries to support this principle by citing a psychological experiment which concluded that greater transfer in verbal learning took place from auditory to visual learning than the reverse.[2] This psychological experiment quoted by Lado however, now needs correction, since the same authors conducted a new series of experiments on the same topic and came out with a different conclusion which did not agree with Lado's reasoning.[3]

[1] R. Lado, *Language Teaching: A Scientific Approach*, (New York, McGraw-Hill, Inc., 1964), p. 50.

[2] Lado, *Ibid*.

[3] P. Pimsleur, D. M. Sundland, R. J. Bonkowski, and L. Mosberg, "Further study on the transfer of verbal materials across sense modalities," *J. Educ. Psychol.*, 55 (1964), 96-102.

However the shortcomings are rather on the interpretation and designing of the experiment, and not on Lado's insight. Lado's attitude is not to be degenerated by their findings. On the contrary, Lado has started a new line of approach to make the teaching and learning of a foreign language more scientific. Although the linguistic truth, the primacy of speech, is very much true, many advocates of the audio-lingual approach have so far sought for the support of the principle only in this linguistic fact. Indeed this linguistic fact explains a great deal on why we should focus our attention and effort more on speech than on reading and writing. It is well justified that learning of a foreign language should be headed toward acquisition of speech forms since they are the complete representation of a language. This argument has more to do with the aims of learning a foreign language, or what to learn and teach. However, we should be careful enough to notice that the totality of speech does not necessarily make necessary and sufficient conditions related to all the aspects of language learning. I assume that the point Lado wants to push forward by referring to a psychological finding seem to lie here. If we take "speech before writing" as the general, basic principle, we need several sub-principles to account for the very complex of the acquisition of a foreign language.

From the view point of learning, "speech before writing" implies, as Lado noted, that aural and oral learning precedes visual learning. Both speech and writing are productive aspects of language use. On the other hand, listening and reading are receptive aspects of language use. When we look into the acquisition of a foreign language, the initial learning takes place in reception of verbal cues, and their understanding. It would safely be said that the principle, "speech before writing," has 'auditory stimulation before visual stimulation' as one of its sub-principles. In actual practice of teaching a foreign language under the audio-lingual approach the learner is supposed to be exposed to the language material first aurally and then he is required to practice it orally. The visual, or graphic learning comes later. It does not precede the aural presentation. In this short paper I will try to defend Lado's principle of language learning with attention focused on the comparative effectiveness of audio versus visual presentation of language material.

II.

It is well justified that learning of a foreign language should be looked at in the light of "learning" in terms of psychology. In fact, it is one of the most sophisticated and complicated processes of all human behaviors.

In the field of psychology and that of audio-visual education the comparative study of effectiveness of learning and retention in terms of sense modalities has been pursued for a long time. They provide a substantial amount of literature on the present issue. The results and discussions are, however, varied from research to research. One is in favor of auditory presentation, and the other is in favor of visual presentation. As far as I have examined the literature on this problem, there are two good and succinct syntheses of experimental research

on sense modality effect on learning: one is done by Krawiec,[4] and the other by Hartman.[5]

According to Krawiec, the investigation of effect of auditory and visual sense modalities on learning has been done in various ways since Munsterberg and Bigham[6] first reported their experiment. As far as the literature cited in Krawiec's review is concerned, more experimental results are in favor of visual mode of presentation than auditory presentation. Those experiments used meaningful words, nonsense syllables, digits, and advertising materials, or combination of these as test materials, and measured learning, immediate recall, or delayed recall. The subjects were all native speakers of English, and the test materials were all in English except the nonsense syllables and digits. Some said that for immediate recall auditory learning was superior to visual learning.[7] Others said that the reverse was true. Worcester reported that the retention of 100-word prose found a great auditory seperiority to visual after one, two, and seven days' interval.[8] Russell reported, using different age groups as subjects, that there was sense modality preference depending on the age of the learner.[9] But this is so apparent that there is no general agreement as to which modality produces the superior score, because the subjects, test materials, and methods are so varied from experiment to experiment. Krawiec himself concludes from his experiment that (1) the visual mode of presentation is superior for learing both nonsense syllables and nouns. (2) as to retention there is no significant difference between the two modes of presentation, and (3) for the learning of difficult material the visual presentation found superiority to the auditory mode of presentation.[10]

Up to the time of Krawiec including him, the aim of research on this topic was to find out the comparative effect of audition and vision on learning. They tried to decide on which modality was superior to the other, which is a misconception now. And hardly any research had been done in connection with the problem of learning foreign languages.

Hartman classified the modes of presentation, or channels through which stimulus is fed, as auditory, pictorial, and print. The division of visual presentation mode into pictorial and print seems to bring the discussion of effect of sense modalities on learning more to the point. According to Hartman's synthesis, as to the comparative effectiveness of audio and print modes using nonsense syllables and digits as test materials, "relative channel effectiveness depends on the difficulty or complexity of the material for a given group of subjects provided the sub-

[4] T. S. Krawiec, "A comparison of learning and retention of materials presented visually and auditoriary," *J. Gen. Psychol.*, 34 (1946), 179–195.

[5] F. R. Hartman, "Single and multiple channel communication: a review of research and a proposed model," *AV Comm. Rev.*, 9 (1961), 235–262.

[6] H. Munsterberg, and J. Bigham, "Memory," *Psychol. Rev.*, 1 (1894), 34–38., cited in Krawiec (1946).

[7] V. A. G. Henmon, "Modes of presentation and retention," *Psychol. Rev.*, 19 (1912), 79–96, cited in Krawiec (1946).

[8] D. A. Worcester, "Memory by visual and auditory presentation, "*J. Educ. Psychol.*, 16 (1925), 18–27, cited in Krawiec (1946).

[9] R. D. Russell, "A comparison of two methods of learning," *J. Educ. Res.*, 18 (1938), 235–239, cited in Krawiec (1946).

[10] Krawiec, (1946), p. 194.

ject can read."[11] The adults seem to find print an advantage whereas younger children seem to favor audio mode regardless of the task. Regarding as the comparative effectiveness between audio and print channel using meaningful words as material, the same generalization as the previous one is made.[12] Hartman gives a few possible explanations on the contradicting research reports, such as seen in Krawiec's report. Hartman attributes the inconsistencies to some defects in experimental design, the relation between the learning and testing situation, and the interpolation of visual elements while testing auditory learning. Hartman is careful enough not to make an over generalization on the comparative effect among sense modalities. His final conclusion is as follows :

> Audio is more effective channel than print when the information presented is simple and easily understood by the subjects, and for the illiterates and semiliterates (e. g. children) regardless of the difficulty of information. Print shows increasing advantage over audio for literate subjects roughly proportional to the increasing difficulty in their comprehension of the material.[13]

Hartman's generalization seems to be based on the findings brougt out in the field of audio-visual education, or communication. His point that the degree of difficulty of the information material and the level of intelligence, or literacy play a determinative role needs to be examined in another context.

III.

The review on the effectiveness of different sense modalties on learning in the previous section will shed some light on the present problem of as to which sense modality needs to be given the relative priority in foreign language learning. This general view on modality effect on learning is indeed a necessary understanding, but we have to take many other elements into account to apply the generalization to foreign language learning. In this respect the research works by Pimsleur *et al* (1961),[14] (1964),[15] and by Asher (1964)[16] would give us clearer insight into the present concern, since these works were done with direct concern on foreign language learning. Pimsleur and Bonkowski's conclusion in their initial work, which was cited by Lado, was corrected in Pimsleur *et al*'s second work. This change is especially interesting and worth noting.

In the initial work Pimsleur and Bonkowski set up an experiment to support the aural-oral approach of foreign language teaching with the view to providing some proofs that aural

[11] Hartman, (1961), p. 237.
[12] Hartman, *Ibid*.
[13] Hartman, (1961), p. 239-240.
[14] P. Pimsleur, and R. J. Bonkowski, "Transfer of verbal material across sense modalities," *J. Educ. Psychol.*, 52 (1961), 104-107.
[15] P. Pimsleur, *et al*, (1964).
[16] J. J. Asher, "Vision and audition in language learning," *Perceptual and Motor Skills*, 19 (1964), 255-300.

learning facilitates visual learning. We notice that the question of transfer of learning across sense modalities came into discussion. In the experiment the subjects were all college students. The test materials were dissyllables matched with English color names. The experiment was designed to measure the amount of transfer of learning either from auditory to visual learning, or vice versa. The transfer of learning was measured by the number of trials the subjects needed to reach the criterion of two consecutive trials in relearning. The situations for relearning was equated with that for original learning: those who initially learned the ten dissyllables matched with the English color words in the order of aural to visual were required to relearn the list in the same order with the original learning. The group for visual to aural learning did the second learning in the same situation as they did first. Pimsleur and Bonkowski reached the conclusion that positive transfer of learning took place in both directions and the group which learned the material first aurally then visully made fewer trials in the relearning phase than the other group.[17] They clearly stated that presentation of language material aurally first would facilitate the learning of written forms.

In the second work, Pimsleur, *et al* brought a fact to our attention which might have caused the previous result. They paid attention to linguistic nature of their test material used in the first experiment.

> . . . a possible alternative explanation lay in the structure of the paired associate materials used. Each pair consisted of a two-syllable nonsense word and a color name (e. g., POLEF-GREEN, MEDON-PURPLE, etc.). . . . a word like KUPOD could more easily be recognized in print after one had heard it, than it could be recognized by ear after having seen it. This possibly is of practical linguistic interest because foreign languages vary in the extent to which their sound-symbol correspondence are in conflict with American ones.[18]

Upon this realization they constructed the test materials which consisted of high and low discrepancy words. High discrepancy words are those which are unlike English and have gap between forms and their pronunciation: WINT /vint/, CHAG /kæg/, etc. Low discrepancy words are similar to English, and pronounced like English: SARF /sarf/, DRIN /drin/, etc. The design of experiment was greatly changed to prevent the 100% transfer from the original learning to the relearning. A 24-hour interval was set between the two phases of learning, and again 14-day interval was set to test the recollection. Whether the subjects learned effectively or not was measured by the number of errors made during seven trials in recollection. From this change in the design we notice that an important aspect of learning is dropped. With 24 hours' interval between the initial learning and relearning, the amount of transfer is sure to decrease. And the capacity of retention will come in instead. So, if transfer occurs, it is the one under reduced rate of information storage.

Their conclusion is that "good students quickly learn to recognize both the aural and visual

[17] Pimsleur, and Bonkowski, (1961), p. 107.
[18] Pimsleur, *et al*, (1964), p. 96-97.

forms of foreign words, whether they are presented in V-A order or in A-V order, though the latter order may be slightly harder at first. Poor students find learning easier at first when A-V order is used, though this effect may disappear as they adjust to the learning situation."[19] Pimsleur, *et al* discarded the initial generalization (1961) in favor of the second, and says that A-V order is approximately equal to V-A order in facilitating learning. They attribute the slight difference in learning caused by the two modes of presentation to intellectual capacity of the subjects. On the application of their findings to foreign language teaching they stand in favor of the audio-lingual approach because they assume that the A-V order of presentation facilitates learning almost as equally as V-A order, and besides this fact the audio-lingual approach has other merits such as fostering good pronunciation. We have to be alert in interpreting their findings to notice that their test materials were 'improved' in a sense, but still they are paralogs, and they were treating the learning of a foreign language on word level. They have not said a word on how their pralogs could represent learning of a foreign language system. And we also notice one of the most influential factors which led them to the conclusion. It is the fact that they mixed the high and low discrepancy words evenly in their testing meterial. In spite of their realization of the close similarity between their first test material (1961) and English, it seems to me that they failed to put their improved test material into an appropriate and desirable context. If they had conducted two separate experiments, one of which was on high discrepancy words, the other on low discrepancy words, they should have reached a different conclusion. And this different conclusion would be more applicable to actual situation of foreign language learning and teaching. They should have concentrated on how the learning was if the material was far apart from the subjects' vernacular. Another thing we have to be aware of is that they finally fell back on the difference in intellectual capacity of the subjects to explain the slight difference obtained from two different types of learning. They speak of the two groups of subjects simply as "good" and "poor" students. The factor they should have controlled here was the difference in types of previous learning, particularly the type of language training they had had. However, this work suggests the necessity of comaparative study of the language of the learner and the one he is going to learn. In this sense their work is much more linguistically oriented than other similar research done by psychologists.

Now, Asher's work has brought this linguistic orientation a few more steps closer to actual situations of foreign language learning. As far as my limited knowledge goes, the work by Asher has had no comparative work concerning the present issue. His is the most exhaustive and reliable work from many points of view. What makes Asher's work more acceptable is, among others, that he used natural languages as material; Spanish, Japanese, Russian, Turkish, and Persian. He designed a series of experiments, the situations of which were learning of those languages by American college students. His "learning" also centers around vocabulary learning. His experiments as a whole were conducted assuming actual learning situation while preserving the characteristics of scientific experiments to exclude extraneous variables.

[19] Pimsleur, *et al*, (1964), p. 102.

Measrement of the amount of learning and the direction of transfer either from audition to vision, or the reverse in recognition phase of learning was done using vocabulary acquisition test and translation of a passage in which the word items in the initial learning were included. To measure the production phase the subjects were required a paired associate task, with a picture as a stimulus and the word in the target language as the response. Those subjects assinged to the auditory learning group were required to pronounce the word, whereas the visual group did the production task by writing down the words. The amount of learning was measured by the number of errors in the test. Asher's findings are as follows:

> The transfer of learning from visual to aural was positive and statistically significant for Spanish, Japanese, Turkish, and Persian. However, the transer for Russian was negative but not of enough magnitude for statistical significance. . . . There was positive transfer from aural to visual learning which was definitely significant for Spanish but only marginally significant for Japanese and Russian.
>
> . . . The sequence of vision-audition in learning was superior to audition-vision for Spanish and Japanese. For Russian the trend favored audition-vision, but this was not statistically significant even at the .10 level.[20]

In the discussion of the results obtained through the experiments, Asher says that the phonetic fit hypothesis and the central mediation hypothesis seem to be confirmed.[21] To generalize, when there is one-to-one, or very close correspondence between the sound and the graphic notation in a language, the transfer of learning in either direction between audition and vision is positive and has greatest magnitude. Therefore, in learning such languages as Spanish or Japanese we can expect reciprocal facilitation between auditory and visual learning. The central mediation hypothesis suggests that the sensory channels are only paths to relay incoming and out-going stimuli. The amount of learning and transfer seems to be determined by the nature of the in-coming stimulus. This seems to have been proved by the fact that Asher reached different results with different languages. Asher concluded that "when the language has a phonetic fit, there is an interaction between sensory channel and the data being transmitted or received; and the interaction favors the visual modality."[22]

Indeed, Asher's work has many strong points as mentioned eariler. However, what I would like to pay closest attention among others are the facts that the amount of learning and direction of transfer according to the modes of presentation depends largely on the nature of incoming stimulus. That is, the nature of the language, and the central locus in the brain plays an important role in reception and transmission of information. The subjects used in Asher's tests were all college students who had had quite a long period of formal education before. The age factor, or that of past experience and training seems to be an important point of consideration. It is interesting, however, to compare the two different results, one by Pimsleur (1961) and the other by Asher (1964). Both used supposedly the same type of subjects, col-

[20] Asher, (1964), p. 294.
[21] *Ibid.*, p.296.
[22] *Ibid.*, p. 297.

ege students. The differences in the test materials and design of experiment seems to have caused the two extremes.

By now we are almost sure that the comparative effectiveness of sense modalities on learning should be looked at from at least two points of view. We have to take the characteristics of the language into consideration; whether it has phonetic fit or not produces the difference in the rate of learning. We have to look into how different the target language is from and how similar it is to the learner's mother tongue.

IV.

It seems very difficult to draw a generalization as to which sequence of presenting material is superior in learning a foreign language. It may be impossible to decide on either of the two. It may be impractical to try to draw a clear-cut conclusion on this problem. However there are several other facts and phenomena observed by scientists, which have not been shed light on by the people reviewed so far. Those observations seem to be of great help in integrating the present discussion.

Among them is there Edfeldt's extensive research on silent speech and silent reading.[23] It is a well known phenomenon that we usually fall back on silent speech, or inner speech when understanding is blocked by some interference or other. When the content is difficult or the print is not clear, we find ourselves seeking for some extra aids, which range from invisible and inaudible subvocalization to overt lip movements, or to vocalization. We could take it as the truth statement that "silent speech occurs in the reading of all persons."[24] Although it is said that good readers engage less in silent speech than poor readers, the fact is that silent speech does exist and it is a matter of degree and frequency. Edfeldt says that silent speech seems to "constitute an aid toward better comprehension, but nothing definite can be said."[25] He suggests that trials to remove silent speech be discarded. In other place in the same book he mentions utilization of inner hearing.[26] His point is that auditory memory will be of help in reading as inner seeing or visual memory will facilitate the description of a scenery. This existence of silent speech tempts us to think that auditory image is so deeply ingrained somewhere in the central locus of the brain. This presumable priority of auditory image seems to be supported by two other experimental observations.

Dornic investigated the effect of specific noise on visual and auditory memory span. He reached a conclusion that auditory memory was not interfered by visual noise, whereas visual memory was significantly reduced by auditory noise.[27] This is one of evidences that auditory stimulus has a sort of right-of-way power to visual stimulus as information source. His sub-

[23] A. Edfeldt, *Silent Speech and Silent Reading*, (Chicago, Univ. of Chicago Press, 1960).
[24] *Ibid.*, p. 154.
[25] *Ibid.*
[26] *Ibid.*, p. 86.
[27] S. Dornič, "Effect of a specific noise on verbal and auditory memory span," *Scandinavian J. of Psychology*, 8 (1967), 155-160.

jects were adults. He reports the difficulty of constructing materials and devices to measure pure visual memory span. This means that in visual presentation of some information it is almost impossible to eliminate auditory factor, i.e., verbalization. Gaydos conducted an experiment to investigate transfer of form-discrimination between the visual and tactual sense modalities.[28] He also reports that verbalization played an important role in learning the form either visually or tactually.

All these findings could be taken as support for the inherent primacy of audition over vision. Then why do we have such diversities in experimental reports on effect of sensory modes on learning verbal material? After reviewing these reports possible explanations on the seemingly different results may be done by the central mediation hypothesis mentioned by Asher and by the discussion of the effect of previous training on sense modalities. In processing verbal information the sensory thresholds function only as receptors of the in-coming stimuli, leaving decoding of the information to central nervous system where all verbal information is to be changed into, so to speak, inner speech. The manipulation of language on this level is said to be unconscious in one's own language, and verbalization exists at this level. When we come across some difficulty this verbalization comes out as an apparent behavior. McGeoch and Irion made a clear remark on this point.

> Modality of stimulation does not wholly determine the subject's apprehension of the material. . . . If unaccustomed to auditory presentation, he may attempt to imagine the material visually or to speak it subvocally or he may make implicit movements of writing or drawing of it. The receptor is the starting point of the practical response, but it is by no means its sole determination.[29]

As to the factor of training, Postman and Rosenzweig made a suggestive statement in their report on the investigation of recognition of verbal stimuli through auditory and visual modalities.[30] They say that "frequency of past experience was found to be a significant determinant of both visual and auditory recognition. The effects were clear-cut in auditory than in visual discrimination."[31]

Well, the auditory storage of verbal stimuli is likely to be true. Practice and training is likely to play a part in modality preference. And sensory receptors are likely to be mere passages of in-coming information. Then, is the discussion of as to which sense modality should be given priority totally a nonsense? Is it impractical to think audition and vision separately?

Putting all the reports and observations reviewed so far together, I would like to state clearly that the principle of "speech before writing" is defended.

[28] H. F Gaydos, "Intersensory transfer in the discrimination of form," *American J. of Psychol.*, 69 (1956), 107-110.

[29] J. A. McGeoch, and A. L. Irion, *The Psychology of Learning*, (New York, Longmans, Green, 1952), p. 481.

[30] L. Postman, and M. R. Rosenzweig, "Practice and transfer in the visual and auditory recognition of verbal stimuli," *American J. Psychol.*, 69 (1956), 209-226.

[31] *Ibid.*, p. 226

We have the tendency to store more of verbal stimuli in auditory form as mentioned earlier in this section. We refer to this storage when we use language, and this tendency is especially strong when we come across new or difficult information. We could present foreign language material visually first. But it is very round-about way of doing and in most cases it turns out an erroneous way. When we present some language material visually first the learner never fails to rely on verbalization to take in and understand the new stimulus. But his verbalization will find nothing else but his own tongue as its content. When the graphic notation of the foreign language is so different from the learner's own writing system, he will readily give up learning the new material, or at best, he will try to find every clue to remember the shape of letters and their arrangement in *his* language. This can never be called learning of a foreign language. The learner will have to encounter a total confusion when the sound system of the language is introduced sometime later, because there should be no communality between the two sound systems, those of the foreign language and of the interpolated system of the learner. The learner must un-learn what he assumed to be the sound of the foreign language. When the written form of the foreign language shares some similarity with his language, the learner is more apt to assume the target language to be like his own language only with unfamiliar arrangement of letters.

As long as we have the tendency of verbalization, or presumable auditory storage of inner speech, auditory image plays a vital role in verbal behavior. And learning of a foreign language, if it is learning of a language, is naturally affected by this tendency. Establishing a solid auditory image of the target language is the very basis of acquisition of the language. And this can be achieved by aural exposure to the language, and also by imitative vocalization of the auditory stimuli. Asher concluded that vision to audition presentation was favored. This result can properly be interpreted as the greater similarity is found in written Spanish and Japanese (Romanized) with English than in auditory form. There would be distortion of sounds of each language by Asher's subjects, though nothing is said on this.

The separation of audition from vision in presenting material needs further discussion. Principally both modalities should be complementary to each other, since each of them has its strong and weak points.[32] But generally speaking, audition may well be given priority over vision, or graphic presentation of language material. This holds true especially in early stages of learning a foreign language. And this is again especially true when one learns a foreign language whose written form is strikingly different from his own. For instance, when a Japanese learns English, which is a typical example of phonetic mis-fit, initial presentation should be aural. Otherwise, he would suffer from two great obstacles; one is the big difference between Japanese and English syntactical, phonological, and orthographical systems, and the other, the phonetic mis-fit of English. I suggest, therefore, on the basis of the review done so far, that introduction of written forms desirebly be preceded by aural presentation of linguistic material. Lado's "speech before writing" principle is thus defended. The optimum duration of exposure to aural stimuli, or the time lag between the two modes of presentation, is another

[32] E. J. McCormick, *Human Engineering*, (New York, McGraw-Hill, 1957), p. 427.

problem.

And here we have a by-product after reviewing those research reports. The comparative, or contrastive analysis of the target language and the vernacular is now a time-honored principle so prevalent among the specialists of foreign language instruction. The long empirical knowledge and also one of the schools of linguistics brought this concept to us. We often hear disputes concerning the validity of this concept. But as is seen in the studies by Pimsleur, *et al* and Asher, this has now been proved in the light of another science.

(received, Oct. 15, 1971)